Battling Hydrilla into Retreat

New equipment innovations add to arsenal

Parsley, sage, rosemary and… hydrilla? The freshwater herb, hydrilla (water thyme), is actually an invasive non-native weed that spreads across water bodies and overwhelms native aquatic plant communities and habitats. It also impedes navigation, effective flood protection and water management operations.

The plant is on a never-ending mission to upset the ecological applecart in Kissimmee's Upper Chain of Lakes. But the battle lines have been drawn. For over a decade, Florida's Department of Environmental Protection has provided around $10 million per year to ease the choking hold of this weed in Lakes Kissimmee, Cypress, Hatchineha, Tohopekaliga (Toho), and other smaller lakes.

"Project funding comes from the state's Aquatic Plant Management Trust Fund," said South Florida Water Management District Senior Environmental Scientist Mike Bodle. "In recent years, almost half of the state's available funds have been used for treatments of these lakes," he added. George Horne, District deputy executive director of Operations and Maintenance, noted that the Upper Chain of Lakes is a high-priority management area. "Not only are we enriched by the lakes' environmental values, but we also greatly benefit from their role in navigation and flood protection," he said.

Hydrilla is a hardy perennial sprawling across the water's surface and forming dense stands from top to bottom. It can grow as much as 3 inches in a day. Annually, the plant generates hundreds of thousands of tubers per acre in soils underlying water bodies. These tubers survive drought and other environmental extremes but can be controlled by applications of fluridone herbicide, a substance that is benign to non-plant life. However, the millions of tubers are never completely controlled, so infested lakes need to be treated repeatedly.

To manage the invasive weed, District field staff apply herbicides by boat over the water's surface, and contractors drop herbicide pellets by air. Equipment innovations have greatly increased operational efficiency over the last decade. In the past, aerial applications took many days as more than 10,000 five-gallon buckets of herbicide pellets were manually loaded into the helicopter's hopper. "The process was extremely labor intensive," said Ernie Feller, vegetation management supervisor from the Kissimmee Field Station. "We had 8-12 people loading and reloading buckets."

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Left: Preloaded, recyclable bulk sacks of herbicide pellets are positioned for loading into a helicopter to be applied over Kissimmee's Upper Chain of Lakes. The process has become highly mechanized over the past decade. Above: Hydrilla infestations overwhelm native aquatic plant communities and impede navigation and water management operations. (Photo by A. Murray, University of Florida, Center for Aquatic and Invasive Plants. Used with permission.)

Today, pre-loaded recyclable bulk sacks – each containing hundreds of pounds of pellets – are suspended from a hydraulic loading arm. While the helicopter hovers overhead, the hopper is positioned under the suspended sack and instantly filled with another load. "Now we can reuse the boxes and bags. We have eliminated the extra step of having all those plastic buckets picked up and ground into pieces for recycling," Feller said.

Treatment amounts vary with lake volumes. This year's drawdown of Lake Toho will reduce the amount of water to be treated, thus requiring less herbicide use at a lower cost. However, hydrilla tubers persist even in drawdowns. "The plant is highly adaptable and will lie in wait for southern Florida's version of the monsoons to return," Bodle said. Also, some hydrilla has become resistant. It won't die off using standard treatments, and a second herbicide must be applied. Costs may escalate when treating resistant hydrilla.

Florida has indeed become a battlefield for the control of hydrilla. While termed "a freshwater herb," a more accurate description heard in the realm of hydrilla research is "the perfect weed" – one that requires constant vigilance to maintain reasonable control.

Lake Toho Habitat Restoration on Track

Lake Tohopekaliga's (Toho) drawdown for habitat restoration is on schedule and progressing well. As of late March, workers from the Florida Fish and Wildlife Conservation Commission, the agency overseeing the work, continue to remove 6.7 million cubic yards of muck and nuisance vegetation from the exposed shoreline, which will significantly improve fish and wildlife habitat.

"We couldn't have done it without the assistance of the South Florida Water Management District and Osceola County," said Mike Hulon, a fisheries biologist for the Commission. Hulon added that the Lake Toho habitat recovery process will begin immediately after the muck and nuisance vegetation removal are complete.

To reduce impacts on Lake Okeechobee and the coastal estuaries, the District successfully diverted approximately 55,000 acre-feet of water – more than the 45,000 acre-feet promised – and has stored it on alternative storage sites on private, tribal and public land during the gradual drawdown process.

Lake Toho is one of the lakes in the Kissimmee's Upper Chain of Lakes included in the hydrilla treatment project – one of the world's largest invasive-weed control projects of its kind. The lowered volume of water in Lake Toho will allow for a savings of $2.5 million in treatment costs.

An Extreme Makeover!

You've seen it on TV.

People from around the nation are lining up, longing to be remade. The South Florida Water Management District is in on the action, too, but without plastic surgery or cosmetic dentistry. The District's web site (www.sfwmd.gov) is benefiting from an "extreme makeover," and you can see the results starting in April.

"Our web site has grown by leaps and bounds over the past eight years," said Jo Ann Hyres, director of the Department of Public Information. Each month, the site averages more than 3 million "hits." The site includes more than 100,000 pages, and continues to grow: to a point where some unsightly wrinkles and bulges were starting to show.

"We knew the site needed to be redesigned, based on what we were hearing from users," Hyres said, "and from the latest research on web site usability." The goal is to make the site simpler to navigate, more useful, and, ultimately, more attractive. "Check it out," she said, "and let us know what you think of our new-and-improved web site."

Before

After